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### Aging and financial planning for retirement

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**AGING AND FINANCIAL PLANNING FOR  
RETIREMENT: INTERDISCIPLINARY INFLUENCES  
VIEWED THROUGH A CROSS-CULTURAL LENS\***

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**ABSTRACT**

Current theoretical models support the existence of interactions between the individual and socio-environmental forces when it comes to the formation and enactment of life plans (Friedman & Scholnick, 1997; Shanahan & Elder, 2002). In this investigation, we examine the social, economic, and psychological forces that impact financial planning for retirement. The collective force of these three broad sets of influences was examined from developmental and cross-cultural perspectives, among respondents from two countries with very different retirement financing systems. Participants were 419 American and 556 Dutch working adults, 25-64 years of age. Path analysis models were created to examine differences in planning associated with age and national origin. Compared to younger individuals, older respondents in

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both countries were more involved in nearly all aspects of the financial planning process. Differences across cultures were also observed in the social support mechanisms that underlie planning and the impact economic forces have on perceptions of saving adequacy. The discussion focuses on the value of developing interdisciplinary theoretical models of planning, and how such models can inform the development of savings-oriented intervention and public policy initiatives.

Why doesn't everyone with reasonable financial means plan and save for retirement? A surprisingly large number of workers in westernized societies are only nominally involved in planning and saving for old age (Marquis, 2002), despite the availability of resources to invest. What dimensions—psychological and otherwise—are responsible for differences in financial planning predispositions? The answer to this seemingly simple question, as it turns out, is rather complex.

In the present investigation, an interdisciplinary motivational model of financial planning is proposed and tested. This model takes into account not only the *psychological factors* that underlie individuals' financial planning decisions, but also indicators of *social support* and *economic forces* that contribute to the decision to plan and save. In evaluating this model, age and cross-cultural influences are taken into consideration by comparing younger and older adult samples drawn from the United States and The Netherlands—two countries that are distinctly different in terms of the financial pillars of support relied upon by pensioners. The proposed interdisciplinary motivational model is empirically tested using path analysis techniques, and mean differences relating to age and country of origin are explored among the factors thought to underlie the tendency to plan.

In previous studies, one's level of retirement planning activities (one of the two chief dependent measures in this investigation) has been shown to be related to saving practices (Stawski, Hershey, & Jacobs-Lawson, 2007), feelings of retirement preparedness (Moen, Erickson, Agarwal, Fields, & Todd, 2000), and retirement satisfaction (Taylor & Doverspike, 2003). The other key dependent measure in this study, perceived saving adequacy, taps the extent to which individuals believe they are saving enough to retire comfortably. As Kemp, Rosenthal, and Denton (2005) have argued, it is critical to assess subjective indicators of financial planning (such as perceived saving adequacy), because it is one's subjective world that serves to structure individuals' perceptions of financially-related opportunities and constraints. Although numerous investigations have measured actual retirement saving rates, the present study is unique by setting as its focus perceived saving adequacy, which we believe to be the psychological precursor to saving behavior. The construct validity of the measure of perceived saving adequacy has been established in previous studies, in that individuals' perceptions have been demonstrated to be significantly positively

correlated with indicators of both wealth and actual saving rates (Hershey, Mowen, & Jacobs-Lawson, 2003; Neukam, 2002).

This research stands to make three contributions to the literature. First, it extends existing psychological research on financial planning to account for social and economic influences on the individual. Second, this study extends cross-cultural psychological research in an important direction by assessing cross-national differences in social and economic influences on planning (i.e., indicators designed to tap differences in social ecologies). According to Matsumoto and Yoo (2006), social ecologies are rarely explicitly measured in cross-cultural comparative investigations. The third contribution of this research is that it should help to explain the reasons behind the existence of age differences in retirement planning. Relative to older workers, younger workers have been shown to be less engaged in a variety of aspects of the financial planning process. However, psycho-social explanations for developmental differences have largely been speculative.

### APPLIED IMPERATIVE

A variety of events have occurred in recent years that have thrust the issue of retirement income security into the international economic spotlight. Baby boomers around the world are living longer and early exit pathways from the workforce mean that they will spend more time in retirement than their predecessors (Gruber & Wise, 1999). Most boomers, as it turns out, will need to support themselves financially for a period of 20-25 years. This will place an unprecedented burden on public pension systems (Barr, 2006), which are predominantly pay-as-you-go schemes sustained by taxes from a shrinking or slowly growing labor force. To further complicate matters, many boomers—particularly non-planners—will enter retirement with insufficient personal savings to maintain their desired standard of living (Butrica & Uccello, 2004; Lusardi, 2001; Lusardi & Mitchell, 2007a; Moore & Mitchell, 2000). In a recent 10-country investigation conducted by the American Association of Retired Persons, only one in four working adults reported that they had given a lot of thought to retirement (AARP, 2005). Some 41% of respondents in that study felt behind schedule in planning and saving, and 48% of workers across the 10 countries indicated they would need to engage in some form of work-for-pay after they retired. It would not be particularly surprising if this feeling of being behind schedule led many workers to experience what Hayslip, Beyerlein, and Nichols (1997) have referred to as “retirement anxiety.”

Various solutions have been proposed to calm the economic turbulence that looms on the horizon, but the one solution that has repeatedly been advocated is to encourage individuals to increase their level of pre-retirement savings (U.S. Department of Labor, 2006). Regrettably, this is easier said than done, in part because we still only have a rudimentary understanding of the forces that motivate

individuals to plan and save. Most of the work on pre-retirement savings has been produced by micro-economists (Burtless, 2006; Chang, 2005), who have looked at the structural correlates (e.g., income, pension plan availability, planning horizon) of savings accumulations and wealth. Fewer studies have examined the extent to which social forces stimulate planning practices, and fewer yet have explored the psychological dimensions that predispose individuals to plan and save. According to Joo and Grable (2000, 2005), the absence of holistic, theoretically-grounded models has been a hindrance when it comes to understanding the motives that drive people to engage in the financial planning process.

It is also important, from an applied perspective, to understand the reasons for the existence of age differences in financial planning for retirement. Most policy initiatives and intervention programs have as their goal to increase individual retirement savings rates. To be successful in this regard, public policy and intervention specialists need to understand not only the psychological, social, and economic forces that influence saving practices, but also how those forces operate on one another among persons at different points in the adult lifespan. It could be that the influence pathways that dictate saving practices among 35-year-olds are different, in some important respects, from those that shape the behavior of 55-year-olds. One goal in constructing path models of the planning process in this study is to establish an age-graded understanding of the mechanisms that underlie long-range financial decisions.

## THEORETICAL BACKGROUND

Theoretical models that stress the importance of the interaction of social and intrapsychic forces stretch back dozens of years (e.g., Lewin, 1943/1997, 1946). Interactionist themes highlighting the connection between organism and environment can also be found in more recent formulations of life planning and financial decision making, including the model of financial planning advanced by Dan (2004), the life planning model proposed by Smith (1999), and the model of financial planning for retirement developed by Hershey (2004). Each of these theoretical frameworks posit that psychological development takes place in a socio-historical context, and individual plans and decisions are shaped by both structure and agency (Elder & Shanahan, 2006; Settersten, 1998; Shanahan & Elder, 2002).

Figure 1 contains an influence diagram of the partial field of forces believed to shape financial planning practices. This diagram served as the foundation for the theoretical model that will be tested in this study. As seen in the figure, proximal determinants of planning and saving include psychological dispositions and economic influences. Social support also plays a role in structuring planning; however, its influence is thought to be mediated by one's psychological predispositions. Relative to other models that have appeared in the literature, the

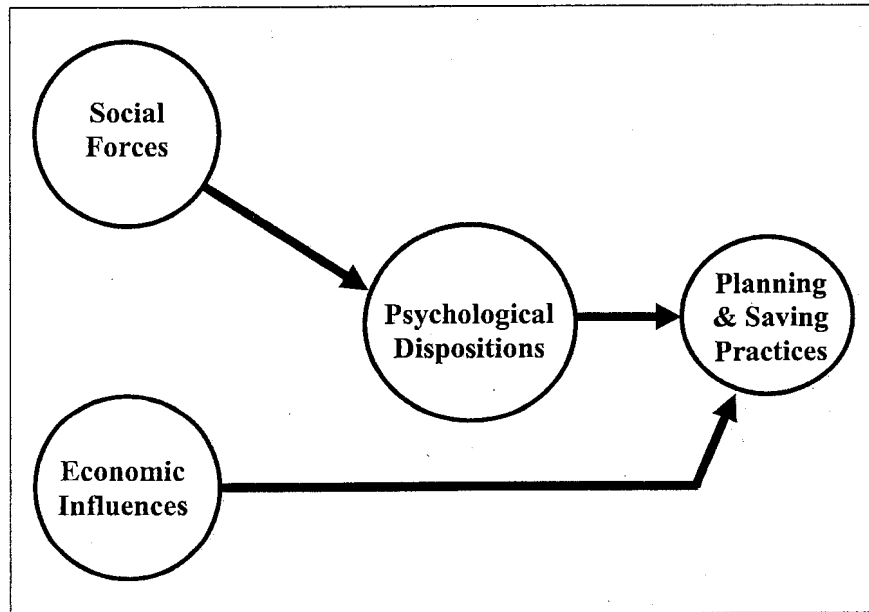


Figure 1. Conceptual model of the broad field of forces that influence financial planning practices. This model was used to guide the development of the hypothesized model shown in Figure 2.

model evaluated in this investigation is innovative in that it accounts for effects stemming from three different disciplines—namely, psychology, sociology, and economics. An expanded version of this influence diagram containing specific measurement constructs and testable hypotheses is presented later in the introduction; but first, we turn our attention to the issue of aging and retirement planning.

### **Aging, Saving, and Retirement Planning**

There is a wealth of evidence to suggest that there are significant differences in retirement planning and saving at different points in adulthood, with older pre-retirees more strongly oriented toward financial planning than their younger counterparts (Dan, 2004; Ekerdt, Hackney, Kosloski, & DeViney, 2001; Julia, Kilty, & Richardson, 1995; Stawski et al., 2007). Research has shown that not only do older adults plan more than younger persons, but they are also more likely to hold a retirement savings account, save at a greater rate, and have more in the way of assets (DeVaney & Chiremba, 2005; DeVaney & Zhang, 2001; Gist, 2006; Helman, Greenwald, Copeland, & Van Derhei, 2006). Not only do planning and saving practices differ as a function of age, but certain psychological, social, and

economic dimensions thought to underlie the tendency to plan have also shown developmental effects. In the following paragraphs we focus on key underlying motivational variables, with an emphasis on those constructs that will be tested as part of the interdisciplinary model in this investigation.

### *Psychological Dispositions*

Relative to work in the fields of economics and sociology, research in psychology on financial planning for retirement is still in its youth. Despite this fact, a number of important developmentally-linked psychological dimensions have been shown to be related to financial preparedness, including personality indicators, cognitive variables, and affective dimensions (Croy, 2007). Three psychological constructs will be included in the model tested as part of the present investigation: financial knowledge, retirement goal clarity, and future time perspective.

One of most often identified cognitive predictors of financial planning is one's level of financial knowledge. High-knowledge individuals have consistently been shown to plan and save more than their low-knowledge counterparts (Chan & Stevens, 2003; Ekerdt & Hackney, 2002; Grable & Lytton, 1997), and Mitchell and Moore (1998) concluded that individuals often fail to plan for retirement because they lack sufficient domain-specific knowledge. Financial knowledge, which has been demonstrated to increase as a function of both formal interventions and hands-on investing experience (Bernheim, Garrett, & Maki, 1997; Clark & Schieber, 1998; Hershey, Mowen, et al., 2003), has time and again been shown to be an excellent predictor of financial planning activities, asset accumulations, and wealth. Findings on the relationship between financial literacy and age in adulthood have been equivocal, with some studies showing a positive relationship between the constructs (e.g., Lusardi & Mitchell, 2007b; National Council on Economic Education, 2005), and others reporting non-significant outcomes (e.g., Bernheim, 1998).

Another cognitive psychological construct that has been shown to be associated with a successful pattern of planning and saving for late life is retirement goal clarity (Glass & Kilpatrick, 1998; Hershey, Mowen, et al., 2003; Neukam & Hershey, 2003). The formation of clear and realistic savings goals is one of the most important steps one can take when initiating a formal retirement savings plan (Bernheim, Forni, Gokhale, & Kotlikoff, 2002). Moreover, the ability to formulate financial goals has been linked to high levels of self-actualization (Carver & Baird, 1998). A recent study by Riediger, Freund, and Baltes (2005) revealed that personal goals are positively related to age in adulthood, with older adults more actively involved in goal pursuits than younger persons. Consistent with this finding, Stawski et al. (2007) reported finding a substantial bivariate relationship between age and retirement goal clarity, and Nurmi (1992) reported that older adults cite the achievement of retirement goals as a critical developmental life task.

Future time perspective is a personality trait that has also been associated with financial planning for retirement among adults in the 18-65 year age range. This construct has been characterized as a "central" personality trait in the literature (cf. Mowen, 2000), and one that theoreticians have argued is shaped by multiple factors, including "cardinal" personality traits such as conscientiousness and emotional stability (Hershey & Mowen, 2000), culturally-based social norms regarding the perception of time (Jones, 1988), one's chronological age (Gonzales & Zimbardo, 1985), life stage (Sears, 1981), and perceived proximity to death (Carstensen, 2006). In a number of investigations, one's orientation to time has been suggested to have either a direct or indirect influence on planning and saving (Burtless, 1999; Hershey, Henkens, & Van Dalen, 2007; Hershey, Jacobs-Lawson, McArdle, & Hamagami, 2007; Lusardi, 1999; Webley & Nyhus, 2006). With a few exceptions, previous studies have shown that high levels of future time perspective are associated with being married, being male, having a high income, and having achieved high levels of education (Bortner & Hultsch, 1974; Glass & Kilpatrick, 1998; Gonzalez & Zimbardo, 1985; Rakowski, 1979). Although orientation to time has been conceptualized in a variety of ways (Seijts, 1998), in the present investigation future time perspective is viewed as a form of "extension," that is, how far into the future an individual looks when thinking about his or her life. There is recent evidence to suggest that this form of future orientation may increase over the course of the adult lifespan (Padawer, Jacobs-Lawson, Hershey, & Thomas, 2007). Interestingly, Webley and Nyhus (2006) found that parents' future time perspective was related to children's future orientation, and children who were oriented toward the future tended to save more as adults.

### *Social Forces*

The influence of social forces on the individual is an often overlooked dimension when it comes to the study of financial planning. Based on the tenets of social learning theory, friends, family members, and co-workers can all have an effect on the financial goals individuals set for the future—and accordingly, one's level of motivation associated with achieving those goals (Bandura, 1977, 1986; Goodnow, 1997). Contemporary developmental life-course models stress the importance of viewing individuals as dynamic entities in relation to their environmental context. Elder (1998) succinctly summed up this idea when he wrote, "The life course is age-graded through institutions and social structures, and it is embedded in relationships that constrain and support behavior—Both the individual life course and a person's developmental trajectory are interconnected with the lives and development of others" (pp. 951-952). According to life-course scholars, interpersonal interchanges that take place within larger social networks help to shape age-graded norms and expectations, which in turn would presumably influence the micro-level saving



and investing behavior of the individual. This principle of “linked lives” in relation to human development is one of the cornerstones of life-course theory (Macmillan & Copher, 2005).

In the present investigation, we examine the influence of three different types of social support when it comes to financial planning for retirement—the support of: (a) friends and co-workers; (b) spouses or partners; and (c) parents. There is ample evidence to suggest that members of one’s social network can influence the timing of one’s departure from the workforce, one’s retirement satisfaction, and even one’s level of retirement adjustment (e.g., Greller & Richtermeyer, 2006; Henkens, 1999; Nuttman-Shwartz, 2007; Szinovacz & Davey, 2005; van Solinge & Henkens, 2005, 2007). Fewer studies, however, have examined the relationship between social networks and financial planning for retirement. Of those that have, the majority have examined the role of social networks in relation to financial information gathering and advice (Bernheim, 1998; Chang, 2005; Lee & Law, 2004; Loibl & Hira, 2006).

There is also evidence to suggest that in industrialized societies parental early learning experiences are critical to the financial socialization process (MacEwen, Barling, Kelloway, & Higginbottom, 2001; see also Lusardi, 2001), and interactions with friends, family members, and co-workers play a pivotal role in shaping individuals’ financial planning decisions. However, the psychological mechanisms through which members of social networks influence the decisions of the retirement investor remain poorly understood.

Although we could find no empirical studies with direct bearing on the topic, it is not inconceivable that the social support mechanisms from family and friends that underlie financial planning activities increase as a function of age. As individuals get older and draw closer to retirement age, there is often a growing recognition that time is running short, and accordingly, it is appropriate to step up one’s level of planning activities and saving. It is also plausible that older adults would share these perceptions with others—their spouse, partner, family members and peers—thereby establishing a social mechanism that would reinforce among older adults the importance of saving for late life in an age-appropriate and timely manner.

### *Economic Factors*

Both the American and Dutch retirement systems rest on three primary pillars of financial support: (a) state-sponsored public pension schemes (the so-called “old-age” pension, referred to as AOW in the Netherlands and social security in the United States); (b) employee-sponsored occupational pension programs; and (c) personal savings accumulations. Despite similarities in the overarching tripartite structure of these two systems, important differences exist that could be responsible for differences in the retirement planning practices of Dutch and American workers.

State-sponsored public pensions—the first pillar of support—is one dimension upon which important cross-cultural differences are founded, in part due to the more generous nature of the Dutch system. The AOW program in the Netherlands is a public pension scheme based on a (relatively lucrative) flat-rate payout format. State pensions in the United States, in contrast, consist of two elements. The first is the Old Age Survivors and Disability Insurance program (commonly referred to as “social security”), which is a compulsory, contributory program in which benefits are based on one’s earnings history. The second component is Supplemental Security Income (SSI), which is a means-tested scheme designed to provide an income safety net for those with little or no retirement income and limited resources (Social Security Administration, 2007). In a recent international retirement security survey, 43% of Dutch pre-retirees indicated that their state-sponsored public pension benefit would be a major source of income in retirement, compared to only 28% of Americans (AARP, 2005).

The second pillar of financial support—employer-sponsored occupational pension programs—could also be responsible for cross-cultural differences in planning. In the Netherlands, some 91% of Dutch workers are covered by employer pensions, which are typically of the defined benefit (DB) type. With DB plans, employees can count on a defined level of retirement income based on a computation that uses their salary and years of service. Occupational pensions in the United States are far less widespread—as of 2004, only 54% of adults in the 50-64 year age range had one—and they are typically of the defined contributions (DC) type (AARP, 2006). With DC pensions, benefits are calculated on the basis of the worker’s level of pre-retirement contributions. The relative “certainty” of outcomes associated with the Dutch employer pension system helps workers count on an adequate stream of income in old age, whereas the “uncertain” future value of DC contracts leave many American workers unsure as to the adequacy of their retirement income. Empirical support for the perceived reality of these differential pension-related opportunity structures (Szinovacz & Ekerdt, 1995; Van Dalen & Henkens, 2002) is reflected in Kreidl’s (2000) finding that more Americans than Dutch (42 versus 28%) ascribed socially-based systemic conditions as a key factor leading to poverty.

The third pillar of financial support—voluntary retirement savings—played a negligible role in Dutch households until the 1990s. Through voluntary arrangements, individuals can enter into private pension arrangements with insurance companies in order to “top off” their retirement income, thus preventing a financing shortfall by ensuring an income replacement rate of at least 70%. Voluntary saving arrangements in the American system are made up of private saving instruments such as annuities, stocks, bonds, and other forms of personal investments. This pillar is far more important in the United States than in the Netherlands. According to Börsch-Supan (1998), 21% of American pension income comes from privately saved and accumulated wealth, whereas in the

Netherlands, the corresponding figure is only 4% (see also OECD, 2001). Additional details on the differences between the American and Dutch pension financing systems can be found elsewhere (e.g., de Vos & Kapteyn, 2001; Jousten, 2001).

Structural differences in employer- and state-based pensions in the Netherlands and United States lead to very different saving pressures on the individual worker. In the United States, the focus on personal responsibility for one's retirement financing all but forces workers to think about (if not actually save for) their future retirement. The collectivist nature of pension financing in the Netherlands, in contrast, affords workers greater latitude when it comes to the need to plan and save. This additional measure of financial freedom enjoyed by Dutch citizens is likely to be short-lived, however, in light of ongoing discussions regarding proposed finance reforms to state-based pension schemes that are designed to shift the burden of support onto the shoulders of the individual worker (Van Dalen & Henkens, 2002).

### **Psychology of Retirement Planning in the Two Countries**

There are culturally-based reasons why one might expect to see cross-national differences emerge not only in financial planning tendencies, but also in one's retirement goals and perceived financial knowledge (all three will be assessed in this investigation). Data from a study by Stiles, Gibbons, and Peters (1993) suggest that from as early as adolescence, Americans are indoctrinated to focus on the value of work, earnings, material goods, achievement, and independence (see also Ekerdt, 2004, on this point). The authors go on to suggest that the importance of work among Dutch adolescents is de-emphasized and a focus is placed on establishing a high quality of life through cooperation with others and deriving enjoyment from one's experiences. Similar cross-cultural conclusions regarding differences in work values, materialism, and the importance of leisure pursuits have been reported by Ger and Belk (1996), Gauthier and Smeeding (2003), and Hofstede (1976, 1980). Moreover, Hershey, Henkens, et al. (2007) found American workers more highly involved in a variety of aspects of financial planning for retirement than the Dutch, which presumably reflects the decidedly individualistic focus on planning found in the United States and the collectivistic nature of the pension support system in the Netherlands. Taken together, these findings suggest that in the present study American workers should display a greater involvement in financial planning activities than the Dutch, as well as higher levels of the psychological mechanisms (e.g., future orientation, goals, knowledge) believed to predispose one to plan and save.

In the following section of the article, we describe the model of financial planning for retirement that will be tested in this investigation.

### THEORETICAL MODEL AND HYPOTHESES

The overarching empirical goal of this research is to test the *interdisciplinary financial planning model* shown in Figure 2. The sequential organization of the five variables running laterally in the diagram from future time perspective to perceived saving adequacy is grounded in strong theory. We drew heavily on Beach's Image Theory (Beach, 1998; Beach & Mitchell, 1987) when initially developing our predictions, as well as Mowen's 3M Theory of Personality (Mowen, 2000). Both theoretical frameworks were conceptually useful because they outline, in very specific terms, a proposed sequence of relationships among personality constructs (such as future time perspective), cognitive constructs (such as goal clarity and financial knowledge), and behavior (such as retirement planning activities). According to Image Theory, personality traits are

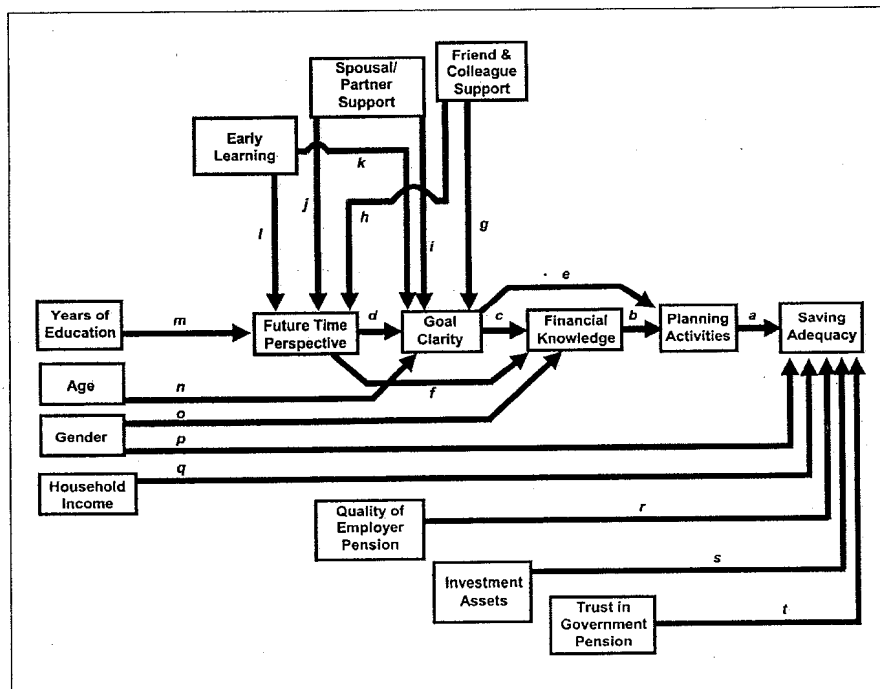


Figure 2. Hypothesized model of the psychological, social, and economic constructs believed to underlie financial planning activities and perceived saving adequacy. This model was used to test the four empirical models shown in Figures 3-6.

fundamental in terms of the motivational sequence. They give rise to one's goals and cognitive representations, which, in turn, motivate specific adaptive behaviors. Beach and colleagues have argued that personality dimensions are part of the "self image," which forms the decision maker's view of what is right, appropriate, and ethical (Beach & Mitchell, 1987). The self image, in turn, shapes one's "trajectory image," which contains not only the individual's goals, but also beliefs about the incremental behavioral steps that allow one to achieve those goals. Hence, in terms of the present investigation, future time perspective would be hypothesized to precede goal clarity and financial knowledge (cognitive constructs), which should logically give rise to retirement planning activities (the behavioral indicator that leads to saving adequacy).

Mowen's 3M Model of personality (Mowen, 2000) is also consistent with the ordering of the five constructs that form the heart of the model shown in Figure 1. According to theory, central traits (such as future time perspective), are causal precursors to what Mowen refers to as surface traits (such as goal clarity and financial knowledge), which themselves precede behavior (such as financial planning practices). Empirical support for this basic configuration was found in applied investigations of the 3M model carried out by Mowen and his colleagues (Hershey & Mowen, 2000; Hershey, Mowen, et al., 2003).

Hypotheses *a* through *f*, which form the psychological core of the model, are also consistent with the empirical findings identified in the Hershey, Henkens, et al. (2007) study, with variables ordered in such a way that goal clarity is hypothesized to be a partial mediator of future time perspective and financial knowledge, and all three psychological variables are precursors to planning and savings adequacy. A partial mediation model will be tested in this investigation, in which both direct and indirect effects are hypothesized to exist between the three psychological variables, planning activities, and perceived saving adequacy.

In addition to the core set of five variables shown in the center of Figure 2, 10 additional variables have been incorporated into the model. Among them are three social support indicators, designed to assess: (a) the influence of one's parents via early financial learning experiences; (b) the support of a spouse or partner when it comes to saving for retirement; and (c) the support of friends and colleagues. As seen in the diagram (and consistent with the conceptual model shown in Figure 1), the impact of the social support indicators on planning and saving adequacy are hypothesized to be fully mediated through goal clarity and future time perspective. Based on the studies cited in the "Social Forces" section above, the working assumptions here are that the six social influence pathways (i.e., hypotheses *g* through *l*), will have their effect on the individual: (1) by shaping beliefs and values that underlie important life goals (hypotheses *g*, *i*, and *k*); and (2) by instilling in individuals a set of social norms regarding the retirement planning process, as well as

timing expectations that will help structure one's orientation to the future (hypotheses *h*, *j*, and *l*).

In addition to the three social support indicators, three economic variables are included in the interdisciplinary model: (a) perceptions of the quality of one's employer pension; (b) the possession of investment assets that will help finance retirement; and (c) perceptions of the extent to which the state (i.e., federal government) will provide a satisfactory pension income. Each of these indicators has been shown to be related to savings practices in other studies (see the "Economic Factors" section); therefore, in the proposed model each is hypothesized to have a direct effect on perceived saving adequacy (hypotheses *r*, *s*, and *t*).

Four background variable indicators have also been included as control variables in the interdisciplinary model: educational level, age, gender, and household income.

A central goal of this investigation will be to test for age and cross-cultural differences in financial planning for retirement. Toward that end, four separate path models will be constructed using independent samples of adults: younger Dutch; older Dutch; younger Americans; and older Americans. It will be particularly interesting to see whether the structure of the models turns out to be identical for the four different groups, and the extent to which parallel path coefficients are comparable across models.

There is reason to believe that the path models of younger and older respondents might reveal structural differences when compared. One need not look long or hard at the cognitive aging literature to find studies that report age differences in decision-making strategies (Johnson, 1990; Mata, Schooler, & Rieskamp, 2007; Mather, 2006). Age-related strategic processing differences in the area of financial decision making (e.g., Hershey, Jacobs-Lawson, & Walsh, 2003) could also result in qualitative differences in the path models of younger and older adults. That is, use of a certain processing heuristic could attenuate the influence of particular social or psychological influence pathways, resulting in structurally unique path models. Finally, it is worth pointing out that it would not be *uninteresting* to find that the path models of younger and older adults were structurally similar to one another. In fact, that would be a "best case" outcome in terms of real-world applications, as it would suggest that similar types of saving intervention initiatives (ones that focus on goal development or financial knowledge enhancement, for instance) could potentially be effective for a wide range of working adults.

We can also expect to see differences emerge when examining the structure of the path models cross-culturally. It is anticipated that the psychological core of the American and Dutch models will be structurally similar but exhibit quantitative differences in slope coefficients and explained variance estimates. It remains to be seen however, how the influence of the social and economic factors will ultimately play out cross-nationally. Finding differences along the social and economic

dimensions would not be unexpected, as the social pressure to plan and save is so strong in the United States, and economic forces—such as social security and pension programs—differ so markedly in the two countries. At any rate, it is expected that the two American models will be found to be more robust than those developed for the Dutch, due to the highly individualized nature of financial planning for retirement in the United States.

Given space limitations, it will not be possible to make age and cross-national predictions regarding all possible hypothesized outcomes; however, the following is a brief rundown of some of the more probable ones. In terms of age group differences, we expect to find that two of the psychological variables—goal clarity and financial knowledge—will serve as more important determinants of planning among older individuals than younger adults. This is because there is evidence to suggest that these two constructs show a clear developmental trajectory over the course of adulthood. Thus, the range of individual differences one could expect to see among older adults along these two psychological dimensions should be greater than it is among younger workers (and accordingly, the predictive power of these variables in the path models should be superior among older respondents). Not altogether unrelated to these predictions, it is conceivable that the planning practices of younger adults would be more heavily influenced by savings-related early learning experiences. After all, relative to older workers, younger persons are temporally “closer” to the lessons they learned about financial planning from their parents. The role of income in the model (as a predictor of savings adequacy) might also be expected to play a more significant role among older adults, as the variability surrounding income scores (and thus, the availability of discretionary resources to invest) could be expected to be greater among those who are closer to retirement age.

Certain cross-cultural differences are also expected to emerge when nation-based slope comparisons in the path models are carried out. For instance, institutional support for retirees (as measured by the quality of one's employer pension and trust in a governmental pension) could be expected to play a greater role in determining savings adequacy among the Dutch, due to their greater reliance on employer and government pensions as post-employment sources of support. Pathways involving the psychological constructs in the models should also reveal cross-national differences, with stronger coefficients observed in the American path diagrams due to the high levels of personal responsibility associated with financial planning in the United States.

In addition to the modeling objective outlined above, two-way (Age  $\times$  Nationality) analysis of variance (ANOVA) models will be calculated for each of the key variables under investigation. Based on the literature cited above, we expect to find younger and older Americans will be more highly involved in all levels of the financial planning process relative to their Dutch counterparts.

## METHOD

### Participants

A total of 419 Americans between the ages of 25-64 participated in the study (mean age 45.4 years,  $SD = 11.0$ ). They were sampled from public places (e.g., libraries, community group meetings) in the north central Oklahoma area. Respondents had completed 16.0 years of education on average ( $SD = 2.4$ ), they had an average household income of \$82.4K USD ( $SD = \$30.5K$ ), and the sample was evenly divided between married men and women (49.4% male). For analysis purposes, the midpoint of the 40-year age range was used to divide the sample into subgroups of younger and older adults, aged 25-44 and 45-64. The demographic characteristics of these subgroups are shown in Table 1.

Dutch respondents were 556 individuals between the ages of 25-63 (mean age 44.0 years,  $SD = 9.9$ ). Compared to Americans, Dutch respondents had somewhat lower levels of education ( $M = 15.5$ ;  $SD = 2.6$ ) and household income ( $M = \$63.1K$  USD,  $SD = \$35.1K$ ). Data were collected from Dutch participants by the *CentERdata* databank at the University of Tilburg (<http://www.centerdata.nl>). *CentERdata* maintains a representative internet-based panel of 2,000 households in the Netherlands. Like the Americans, the Dutch sample was also divided into younger and older subgroups. All Dutch participants also indicated that they were living with a partner at the time of testing. Males somewhat outnumbered females, comprising 60.4% of the Dutch sample.

Table 1. Mean Scores and Standard Deviations (in Parentheses) on Demographic Variables for Younger and Older Dutch and American Samples

	Americans		Dutch	
	Young	Old	Young	Old
Sample size	193	226	278	278
Gender composition (% male)	49.7	49.1	55.8	65.1
Age	35.1 (5.88)	54.1 (5.23)	35.3 (5.08)	52.6 (4.59)
Years of education	15.7 (2.16)	16.2 (2.50)	15.9 (2.31)	15.0 (2.85)
Household income (USD) (in thousands)	75.7 (31.1)	88.1 (28.8)	59.6 (35.3)	66.7 (34.5)



## Description of Measures

Table 2 contains a description of each of the psychological, social, economic, and financial planning measures used in this investigation.<sup>1</sup> This table includes a brief description of each single-item indicator or scale, as well as its response format or coding scheme. Also identified in the table are the sources of any previously published scales, or scales from which individual items have been drawn. Coefficient alpha values are also reported for all multi-item scales/measures; all reliability values were found to be above threshold for research purposes (cf. Nunnally & Bernstein, 1994).

As a check on the divergent validity of the latent factors, a full measurement model was calculated containing items from all scales with more than three indicators. Items failed to reveal appreciable loadings on scales other than their own, and the fit indices for the model were adequate. This finding reveals a reasonable degree of conceptual independence among the five multiple-item scales. Two other country-specific analyses were carried out to assess the cross-cultural stability of the measurement model. For Americans, a chi-square difference test between a five-factor measurement model and a common-factor model showed the five-factor configuration to be superior,  $\chi^2_{\text{diff}}(10) = 516.02$ ,  $p < .01$ . A comparable effect was found for the Dutch, with the multiple factor model yielding a superior goodness-of-fit relative to the single latent variable configuration,  $\chi^2_{\text{diff}}(10) = 1293.92$ ,  $p < .01$ .

A check was also made to ensure that the meaning of the items for the three psychological scales and the planning and saving indicators were comparable across cultures (Poortinga, 1989; Van de Vijver & Leung, 1997). To this end, 10 separate factor analyses using principal-components analysis were calculated (one for each nationality for each of the five multi-item scales). For both Dutch and American respondents, each of the scales was found to have a dominant single-factor structure, and the observed factor loadings did not vary appreciably across groups. These findings provide empirical support for the cross-national comparability of the measures (Dam-Baggen, Kraaimaat, & Elal, 2003) and the integrity of the language translation process.

The four background variables included in the study—age, annual household income, gender (0 = male; 1 = female), and level of education—were measured in the conventional fashion.

## Design and Analysis Plan

The first series of analyses involved calculating two-way (age  $\times$  nationality) ANOVA models in combination with planned comparisons to examine means for

<sup>1</sup> A complete list of items for all scales and measures used in the study is available from the first author upon request.

each of the major variables. These analyses were designed to provide information on how much financial planning the members of the four groups are doing, and how strongly they rated the psychological, social, and economic force indicators.

The second analytic step involved testing the structural model outlined in Figure 2. Consistent with well-established multi-group structural equation modeling procedures (Maruyama, 1998; Vandenberg & Lance, 2000), a single-group model will initially be tested based on data from all 975 study participants. Both *age* and *nationality* will be included in this model as exogenous variables. Significant paths from age to one or more endogenous variables will provide justification for carrying out an age-based follow-up analysis. Similarly, significant paths between nationality and one or more endogenous variables will justify a cross-national follow-up analysis. Significant paths from both age and nationality to endogenous variables would justify the computation and comparison of four separate (age  $\times$  nationality) subgroup models.

In sum, the mean score analyses are designed to provide information about the relative strength of each variable for each of the four subgroups. The path analysis models, in contrast, are designed to provide a broader view of how the different variables are related to one another, and how the relationships among variables differ across the four subgroups.

## RESULTS

### Planned Comparisons

Table 3 contains mean scores for each of the key variables in the investigation reported for each of the four (age  $\times$  nationality) subgroups. For each measure, a 2 (age group: young/old)  $\times$  2 (nationality: American/Dutch) ANOVA was computed. Significant main effects and two-way interactions that exceeded the .05 or .01 thresholds, when present, are shown in the "variable/effects" column.

With regard to age differences, younger individuals were found to have significantly lower scores in all eight of the eleven cases in which there was a significant age effect. On average, younger individuals had lower scores for savings-related early learning experiences, friend and or colleague support, investment assets for retirement, trust in government pension programs, future time perspective, retirement goal clarity, perceived financial knowledge, and financial planning activity level.

Cross-cultural differences were also prevalent, with significant cross-national main effects observed for all 11 dependent measures. In all but three of the 11 instances, the observed mean scores were lower for Dutch respondents than Americans. Specifically, the Dutch had lower scores for spousal support levels, the support of friends and colleagues, investment assets for retirement, future time perspective, retirement goal clarity, perceived financial knowledge, financial planning activity level, and perceived savings adequacy.

Table 2. Wording, Response Properties, and Psychometric Properties for Selected Scales and Items

Variable name & source (if applicable)	Variable type and characteristics	Sample item and response format	Coefficient alpha value (scales only)
<b>Early Learning</b>	Single item indicator. Higher scores indicate agreement with statement.	<i>Saving money for the future was an important lesson I learned as a child.</i> 1 = strongly disagree; 5 = strongly agree	n/a
<b>Spousal/Partner Support</b> (items not previously published)	2-item unweighted mean score. Higher values correspond to higher levels of spousal support.	Sample item: <i>My spouse/partner believes it is important to save for retirement.</i> 1 = strongly disagree; 5 = strongly agree	$\alpha = .72$
<b>Friend &amp; Colleague Support</b> (items not previously published)	2-item unweighted mean score. Higher values correspond to higher levels of social support.	Sample item: <i>The people I work with believe it is important to save for retirement.</i> 1 = strongly disagree; 5 = strongly agree	$\alpha = .67$
<b>Quality of Employer Pension</b>	Single item indicator. Higher scores indicate agreement with statement.	<i>My employer provides a good pension plan.</i> 1 = strongly disagree; 5 = strongly agree	n/a
<b>Investment Assets</b>	Single item indicator. Higher scores indicate agreement with statement.	<i>I have assets such as a house or property that will help me finance my retirement.</i> 1 = strongly disagree; 5 = strongly agree	n/a
<b>Trust in Government Pension</b>	Single item indicator. Higher scores indicate agreement with statement.	<i>To what extent do you trust the federal government to provide you with a satisfactory retirement income?</i> 1 = no trust at all; 5 = a lot of trust	n/a

<b>Future Time Perspective</b> Hershey & Mowen (2000); Hershey, Jacobs-Lawson, McArdle, & Hamagami (2007); Neukam (2002)	4-item scale. A single score for this measure was constructed by calculating an unweighted mean. A higher score corre- sponds to a "longer" future time perspective.	Sample item: <i>I enjoy thinking about how I  will live years from now in the future.</i> 1 = strongly disagree; 5 = strongly agree	$\alpha = .66$
<b>Retirement Goal Clarity</b> Hershey, Mowen, & Jacobs-Lawson (2003); Stawski, Hershey, & Jacobs-Lawson (2007)	3-item scale (same scoring procedure as above). Higher scores correspond to higher levels of goal clarity.	Sample item: <i>I have a clear vision of how  life will be in retirement.</i> 1 = strongly disagree; 5 = strongly agree	$\alpha = .84$
<b>Perceived Financial Knowledge</b> Hershey, Jacobs-Lawson, McArdle, & Hamagami (2007); Jacobs-Lawson & Hershey (2005)	3-item scale (same scoring procedure as above). Higher scores correspond to higher levels of perceived financial knowledge.	Sample item: <i>I know more than most people  about retirement planning.</i> 1 = strongly disagree; 5 = strongly agree	$\alpha = .83$
<b>Financial Planning Activity Level</b> Hershey, Jacobs-Lawson, McArdle, & Hamagami (2007); Hershey & Mowen (2000)	4-item scale (same scoring procedure as above). Higher scores correspond to higher planning activity levels.	Sample item: <i>Calculations have been made  to estimate how much money I need to  save to retire comfortably.</i> 1 = strongly disagree; 5 = strongly agree	$\alpha = .84$
<b>Perceived Saving Adequacy</b> Hershey, Henkens, & Van Dalen (2007)	3-item scale. Higher scores correspond to higher levels of perceived savings adequacy.	Sample item: <i>I am saving enough to retire  comfortably.</i> 1 = strongly disagree; 5 = strongly agree	$\alpha = .79$

Table 3. Mean Scores, Standard Deviations (in Parentheses),  
and ANOVA Effects for Each of the Four (Age  $\times$  Nationality)  
Subgroups

Variable/observed effects	Americans		Dutch	
	Young	Old	Young	Old
Early Learning (Age*; Nat.**)	2.76 <sup>a</sup> (1.28)	3.00 <sup>b</sup> (1.33)	3.62 <sup>c</sup> (1.13)	3.72 <sup>c</sup> (1.02)
Spousal/Partner Support (Nat.**)	3.91 <sup>a</sup> (1.04)	3.99 <sup>a</sup> (0.99)	3.36 <sup>b</sup> (0.95)	3.50 <sup>b</sup> (0.93)
Friend/Colleague Support (Nat.**; Age**)	3.55 <sup>a</sup> (0.84)	3.64 <sup>a</sup> (0.83)	3.00 <sup>b</sup> (0.63)	3.18 <sup>c</sup> (0.69)
Quality of Employer Pension (Nat.**)	3.12 <sup>a</sup> (1.36)	3.04 <sup>a</sup> (1.37)	3.56 <sup>b</sup> (1.01)	3.65 <sup>b</sup> (1.10)
Investment Assets (Age**; Nat.**)	3.69 <sup>a</sup> (1.27)	4.15 <sup>b</sup> (0.99)	2.60 <sup>c</sup> (1.21)	2.77 <sup>c</sup> (1.29)
Trust in Government Pension (Age**; Nat.**; AxN**)	2.43 <sup>a</sup> (1.05)	2.91 <sup>b</sup> (1.16)	3.10 <sup>b</sup> (1.07)	3.01 <sup>b</sup> (1.08)
Future Time Perspective (Age*; Nat.**)	3.48 <sup>a</sup> (0.83)	3.57 <sup>a</sup> (0.84)	3.06 <sup>b</sup> (0.66)	3.24 <sup>b</sup> (0.73)
Retirement Goal Clarity (Age**; Nat.**; AxN**)	3.40 <sup>a</sup> (0.83)	3.58 <sup>b</sup> (0.79)	1.97 <sup>c</sup> (0.76)	2.56 <sup>d</sup> (0.86)
Perceived Financial Knowledge (Age*; Nat.**)	3.04 <sup>ac</sup> (0.94)	3.21 <sup>a</sup> (1.00)	2.91 <sup>bc</sup> (0.85)	3.00 <sup>bc</sup> (0.90)
Financial Planning Activity Level (Age**; Nat.**)	2.81 <sup>a</sup> (1.05)	3.27 <sup>b</sup> (1.03)	2.59 <sup>c</sup> (1.02)	2.83 <sup>ad</sup> (1.04)
Perceived Saving Adequacy (Nat.**)	3.44 <sup>ac</sup> (0.84)	3.44 <sup>a</sup> (0.92)	3.28 <sup>b</sup> (0.72)	3.38 <sup>bc</sup> (0.82)

**Note:** The word "Age" in the observed effects column indicates a significant main effect of age group. The abbreviation "Nat." indicates a cross-national main effect, and "AxN" indicates the presence of an age by nationality interaction. Effects with a single asterisk (\*) are significant at the .05 level, those with a double asterisk (\*\*) at the .01 level. Based on planned comparisons, mean scores that share the same superscripts (in any given row) are *not* significantly different from one another at the .05 level.

Americans, in contrast, had significantly lower scores for savings-related early learning experiences, the quality of employer pension plans, and trust in government-sponsored pensions.

In addition to the observed main effects, reliable two-way interactions were observed for two of the ten measures: trust in government pension programs and retirement goal clarity. In terms of the former, young Americans stood out as having significantly lower trust levels compared to the other three groups. And regarding the interaction for goal clarity, the means for all four groups differed from one another, with the highest scores exhibited by older Americans and the lowest found among younger Dutch.

### Development of the Path Models

The model presented in Figure 2 was analyzed using the AMOS v. 5.0 statistical modeling program. Fit indices recommended by Hu and Bentler (1999) were adopted to evaluate the quality of the model—that is, an excellent fit being *TLI* and *CFI* values greater than .95 and a *RMSEA* value of less than .06.

As indicated in the method, the development of the path models began with the test of a single-group model involving all participants in the study. This model was the same as that shown in Figure 2, only it included four additional pathways from a dichotomous variable “Nationality” (Americans; Dutch) to future time perspective, goal clarity, planning activity level, and saving adequacy.<sup>2</sup> Not unexpectedly, this single-group model was a somewhat poor fit to the data,  $\chi^2(93) = 1,673.90$ ,  $p < .01$ ,  $TLI = .940$ ,  $CFI = .959$ ,  $RMSEA = .132$ , which indicates that important differences exist between American and Dutch respondents.<sup>3</sup> This finding provides sufficient justification to look at the data separately for Dutch and American participants. The hypothesized path between age and goal clarity (path *n*) was also statistically significant, which provides justification for re-examining the data separately as a function of age. Therefore, all follow-up model testing was done at the level of the four (age  $\times$  nationality) subgroups.

Next, a yoked 4-group (age  $\times$  nationality) model was tested in which all pathways were constrained to be equivalent. Testing this fully-constrained model is an important step in the multiple-group modeling process as it provides a baseline set of fit indices against which the fit of subsequent (freely-estimated)

<sup>2</sup>These four hypotheses involving nationality stem from effects found for Dutch and American respondents in the Hershey, Henkens, et al. (2007) investigation.

<sup>3</sup>The fact that this was a poor fitting model was not unexpected. It was anticipated that in order to achieve a reasonable goodness-of-fit, the data would have to be examined separately as a function of age and nationality. Thus, the observation of a poor fitting model is what one would theoretically expect to find (in combination with significant paths associated with age and nationality) in this initial analytic step.

models can be compared.<sup>4</sup> The fully-constrained baseline model was found to be a very good fit to the data,  $\chi^2(399) = 1,597.51$ ,  $p < .01$ ,  $TLI = .963$ ,  $CFI = .970$ ,  $RMSEA = .056$ .

In the next step, a model was tested in which parallel path constraints were relaxed and independent beta weights were estimated for each of the 20 paths among each of the four subgroups. This freely-estimated model was also shown to be an excellent fit to the data,  $\chi^2(337) = 1,315.69$ ,  $p < .01$ ,  $TLI = .965$ ,  $CFI = .975$ ,  $RMSEA = .055$ . A chi-square difference test between the fully-constrained and freely-estimated models based on 62 degrees of freedom ( $399\ df - 337\ df$ ) resulted in a chi-square value of 281.83, which exceeds the requisite chi-square critical value at the .01 level. This finding indicates that the freely-estimated four-group model is statistically superior to the fully-constrained model.

The four observed subgroup models are shown in Figures 3 through 6. Values associated with individual paths are standardized beta weights; those contained in brackets are values that were non-significant based on a 1 degree of freedom z-score test. Also shown in the models are  $R^2$  values for each endogenous variable.

In all four subgroup models, an appreciable amount of variance was accounted for in both financial planning activity level and perceived savings adequacy. Furthermore, in all cases the explained variance was greater among Americans than it was among Dutch. It is also worth noting that significant paths were observed in all four models for psychological, social, and economic indicators, a finding that suggests a degree of consistency across groups in the impact of the three sets of predictor variables on retirement planning. A number of significant beta weights were also observed for the four background variables; however, for the most part their magnitudes were small.

The remainder of the results section is dedicated to reporting pair-wise comparisons between the standardized beta weights that appear in the models shown in Figures 3 through 6.

#### *Age Differences in the Path Models*

Table 4 shows the results of slope comparisons (z-tests) between older and younger Americans (in the left column) and older and younger Dutch respondents (on the right). Results listed on the left involve pair-wise comparisons between parallel paths in Figures 3 and 5, and those on the right involve comparisons between parallel paths in Figures 4 and 6.

<sup>4</sup>In all subsequent tests of the model, the variable *nationality* was removed from the configuration. However, the age path (path *n* in Figure 2) was left in each of the four hypothesized models, as it is theoretically possible that age effects could still emerge within any one subgroup (e.g., an age effect among Americans within the 25-44 year age group).

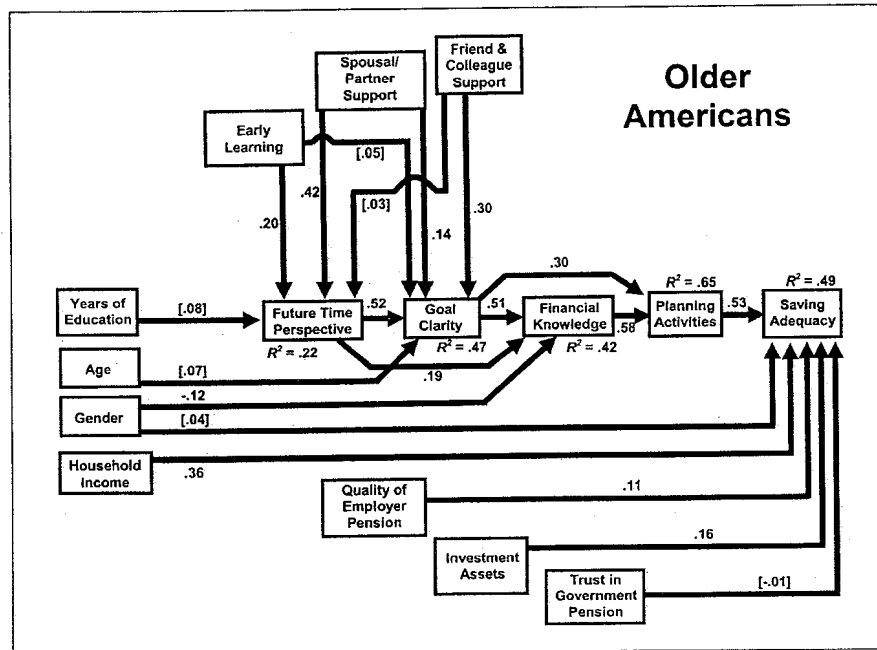


Figure 3. Path analysis model for older American respondents. All path coefficients shown are standardized beta weights. Weights in brackets are those that failed to exceed the .05 significance level.

Among Americans, 2 of the 20 beta weight comparisons between age groups were statistically significant. Among the Dutch, 2 of the 20 age-based comparisons also reached the significance threshold. The broad pattern of non-significant age effects in this context provides indirect evidence of age equivalence when it comes to the field of forces that shape the planning tendencies of American adults, and a similar conclusion holds true for the Dutch. In other words, a reasonable degree of metric and configural invariance can be said to exist (Horn, McArdle, & Mason, 1983) in the interdisciplinary model when it is examined as a function of age.<sup>5</sup>

<sup>5</sup>Configural invariance is said to exist if the general form of the model is consistent across groups. For example, after having estimated models for younger and older Americans, if they include the same set of variables and paths then one could conclude that they are configurally invariant. Metric invariance, in contrast, refers to whether specific pair-wise path coefficient values are consistent with one another—within a reasonable degree of variation—across models. So for instance, the small non-significant difference in coefficients for the path between goal clarity and financial knowledge for younger and older Americans (.50 versus .51) suggests these pathways exhibit metric invariance.



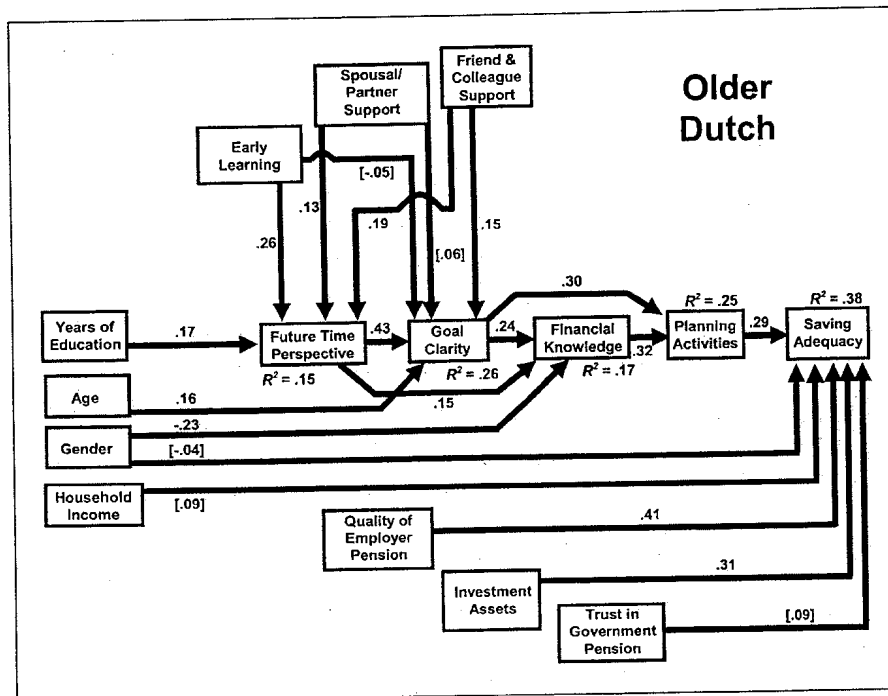


Figure 4. Path analysis model for older Dutch respondents. All path coefficients shown are standardized beta weights. Weights in brackets are those that failed to exceed the .05 significance level.

The absence of age differences in Table 4 should *not* be interpreted, however, as an evidence of a lack of age effects in this research. Recall that numerous age differences were identified among the mean scores reported in Table 3. Thus, the ANOVA findings revealed age differences across many of the retirement and financial planning variables, but the path analysis findings revealed that the way in which those variables operate in the context of the model is comparable for younger and older workers. The applied significance of this finding will be more fully explored in the discussion.

#### *Cross-National Differences in the Path Models*

In addition to the age-based beta weight comparisons, a series of cross-national pair-wise slope comparisons were carried out. Table 5 shows the results of the comparisons between older American and Dutch respondents (in the right column) and younger American and Dutch respondents (on the left). Results listed on the right involve pair-wise coefficient contrasts between parallel paths in

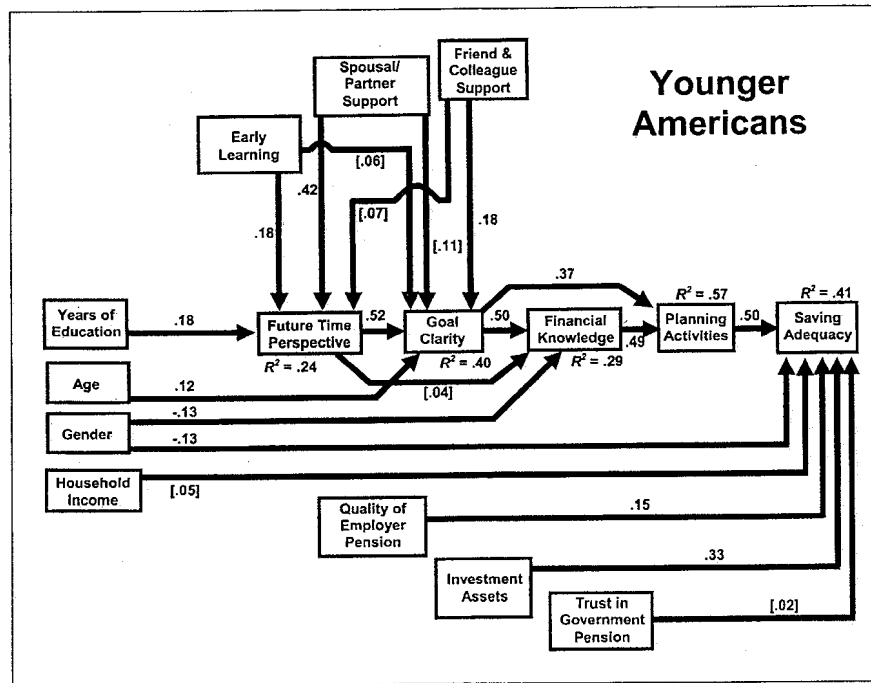


Figure 5. Path analysis model for younger American respondents.  
All path coefficients shown are standardized beta weights.  
Weights in brackets are those that failed to exceed  
the .05 significance level.

Figures 3 and 4, and those on the left involve contrasts between parallel paths in Figures 5 and 6. A visual inspection of effects in Table 5 and the table that precedes it reveals that there are more beta weight differences across nationalities (within age groups) than there are across age groups (within nationalities).

Among younger participants, 7 of the 20 beta weight contrasts between Dutch and Americans were statistically significant. Seven of the 20 cross-national comparisons also reached significance for older adults. Moreover, the fact that five of the seven significant cross-national outcomes overlapped for younger and older adults suggests a fair degree of age invariance when it comes to how the various constructs operate in the broader context of the model.

The findings reported in Table 5 indicate that the variables in the models operate somewhat differently for Dutch and American respondents. There is striking evidence of cross-national differences among the psychological variables in relation to planning and saving adequacy, which are consistent with the findings of Hershey, Henkens, et al. (2007). Cross-national differences also emerged

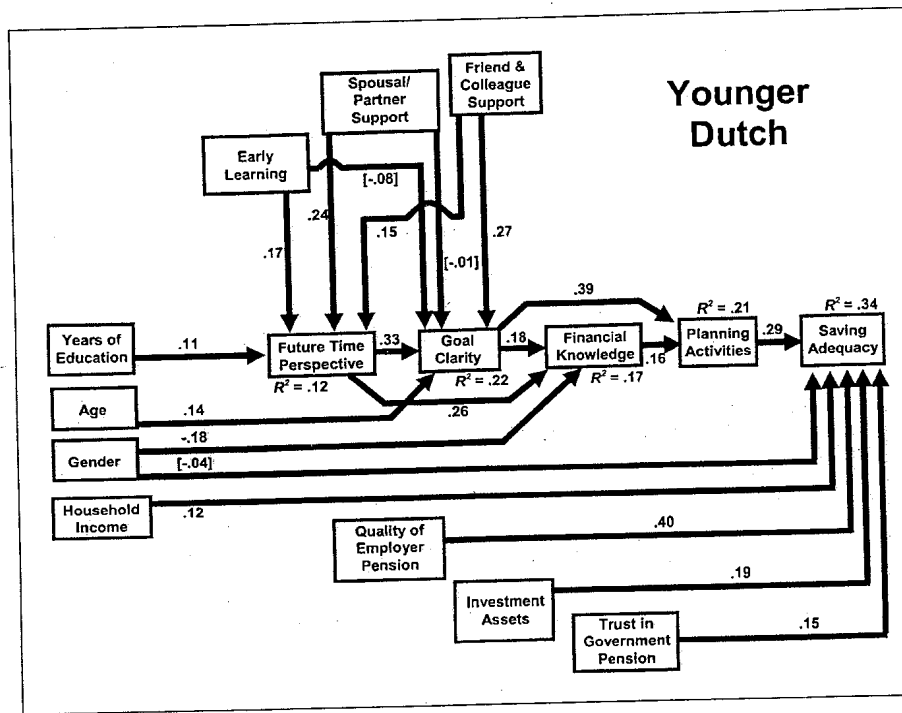


Figure 6. Path analysis model for younger Dutch respondents.  
 All path coefficients shown are standardized beta weights.  
 Weights in brackets are those that failed to exceed  
 the .05 significance level.

among the social and economic influence variables. Four effects in particular are worth noting. First, in both age groups spouses and partners had a more significant influence on the development of future time perspective among Americans than among Dutch. Second, household income was found to be an important predictor of perceived savings adequacy for older Americans but not for older Dutch. Third, the possession of investment assets had a significant influence on perceived saving adequacy among younger American respondents relative to younger Dutch. And finally, in both age groups the quality of one's employer pension was found to be an important predictor of saving adequacy for Dutch respondents relative to Americans.

Taken together, the above findings indicate that the basic structure of the hypothesized model shown in Figure 2 holds across the two countries (that is, cross-national configural invariance can be said to exist). However, the outcomes in Table 5 reveal less in the way of evidence for metric invariance when it comes to comparisons of the two pairs of cross-national models.

Table 4. Probability Level Outcomes for Pair-Wise Slope Comparisons across Age Groups Reported Separately for Each Nationality

Pathway	Older vs. Younger	
	American Ss	Dutch Ss
Planning Activities → Perceived Saving Adequacy	—	—
Financial Knowledge → Planning Activities	—	.05
Goal Clarity → Financial Knowledge	—	—
Future Time Perspective → Goal Clarity	—	—
Goal Clarity → Planning Activities	—	—
Future Time Perspective → Financial Knowledge	—	—
Gender → Financial Knowledge	—	—
Friend/Colleague Support → Goal Clarity	—	—
Spouse/Partner Support → Goal Clarity	—	—
Early Learning → Goal Clarity	—	—
Friend/Colleague Support → Future Time Perspective	—	—
Spouse/Partner Support → Future Time Perspective	—	—
Early Learning → Future Time Perspective	—	—
Years of Education → Future Time Perspective	—	—
Age → Goal Clarity	—	—
Gender → Perceived Saving Adequacy	.05	—
Household Income → Perceived Saving Adequacy	.01	—
Quality of Employer Pension → Perceived Saving Adequacy	—	—
Investment Assets → Perceived Saving Adequacy	—	.05
Trust in Government Pension → Perceived Saving Adequacy	—	—

**Note:** A statistically significant outcome in this table, such as the .05 result for Dutch respondents on the path between financial knowledge and planning activities, indicates that the observed slopes of .16 and .32 are significantly different for younger Dutch and older Dutch respondents, respectively. A dash indicates a non-significant age comparison.

Table 5. Probability Level Outcomes for Pair-Wise Slope Comparisons across Nationalities Reported Separately for Each Age Group

Pathway	American vs. Dutch	
	Younger Ss	Older Ss
Planning Activities → Perceived Saving Adequacy	.01	.01
Financial Knowledge → Planning Activities	.01	.01
Goal Clarity → Financial Knowledge	.01	.01
Future Time Perspective → Goal Clarity	—	—
Goal Clarity → Planning Activities	—	—
Future Time Perspective → Financial Knowledge	.05	—
Gender → Financial Knowledge	—	—
Friend/Colleague Support → Goal Clarity	—	—
Spouse/Partner Support → Goal Clarity	—	—
Early Learning → Goal Clarity	—	—
Friend/Colleague Support → Future Time Perspective	—	.05
Spouse/Partner Support → Future Time Perspective	.01	.05
Early Learning → Future Time Perspective	—	—
Years of Education → Future Time Perspective	—	—
Age → Goal Clarity	—	—
Gender → Perceived Saving Adequacy	—	—
Household Income → Perceived Saving Adequacy	—	.01
Quality of Employer Pension → Perceived Saving Adequacy	.01	.01
Investment Assets → Perceived Saving Adequacy	.05	—
Trust in Government Pension → Perceived Saving Adequacy	—	—

**Note:** A statistically significant outcome in this table, such as the .01 result for older respondents on the path between planning activities and perceived saving adequacy, indicates that the observed slopes of .53 and .29 are significantly different for older American and older Dutch respondents, respectively. A dash indicates a non-significant age comparison.

## DISCUSSION

The overarching goal of this investigation was to test an interdisciplinary model of financial planning. In doing so, we explored age and cross-cultural differences by comparing data drawn from separate samples of American and Dutch adults. In addition, we examined mean differences in the motivational factors thought to underlie the tendency to plan and save. Both age and cross-cultural effects were prevalent, particularly with respect to the magnitude of mean differences across groups among the underlying motivational variables. Strong empirical support was also found for the hypothesized interdisciplinary model, which was successful in accounting for appreciable variance in planning practices and perceived saving adequacy among members of all four subgroups. Taken together, these findings represent a contribution to the body of work on financial planning by building on existing disciplinarily-based models so as to construct a broader, multivariate theoretical framework (cf. Joo & Grable, 2005).

In terms of the interdisciplinary financial planning model, the core set of psychological elements contained within it—financial knowledge, retirement goal clarity, and future time perspective—all performed admirably as predictor variables. This outcome was not unexpected, however, given that empirical studies have shown these constructs to be precursors to planning and saving (e.g., Bernheim et al., 2002; Chan & Stevens, 2003; Hershey, Jacobs-Lawson, et al., 2007; Lusardi, 1999). Arguably one of the more novel contributions of this work, as far as the model is concerned, is in the identification of pathways via which social support has its (indirect) influence on planning and saving. Early savings-related learning experiences and the savings-related support of a spouse and/or partner help influence planning practices by helping “extend” one’s time perspective further into the future. The support of friends and colleagues, when felt, is likely to have its impact on the clarity of an individual’s retirement goals. These specific social influence pathways indicate mechanisms via which future intervention efforts might profitably be aimed. Specifically, data from this study suggest that parents should be encouraged to cultivate long future time perspectives in their children to have a maximal positive impact on adaptive future savings practices. Spouses and partners should also be encouraged to openly discuss long-range financial plans and retirement aspirations to boost retirement goal clarity levels and financial information seeking behaviors (with the latter facilitated via the indirect path from time perspective to knowledge).

Looking beyond the social support dimensions, economic forces were also found to have a non-trivial effect in the model. The quality of one’s employer pension had a pronounced impact on perceived saving among the Dutch, which is intriguing inasmuch as a high quality pension could, paradoxically, serve under certain circumstances as a disincentive to save (e.g., when trust in a governmental pension is high and retirement resources needs are expected to be relatively low). Among Americans—particularly younger American adults—a lack of trust

in the federal government may provide strong incentives to save by motivating individuals to fend for themselves in the retirement financing arena. Findings from both the model and the mean score analysis revealed that for Americans, particularly older American adults, cultivation of a portfolio of investment assets is another important step one can take to establish an adequate financial nest egg. Taken together, the various effects observed for the economic variables in the model were more closely tied to nationality than age—presumably reflecting key structural differences in the pension financing systems in the Netherlands and the United States.

### Implications and Future Directions

A number of implications, both theoretical and applied, follow from this investigation. From a theoretical perspective, the data support the notion that an interdisciplinary approach is needed to best represent the array of forces that shape the motives of the retirement investor. Relative to most types of “everyday” cognitive tasks (cf. Marsiske & Margrett, 2006), decisions that involve retirement planning and financial investing are exceedingly complex (Gao, Wang, & Xu, 2007). At the very least, they require the coordinated interplay of cognitive and personality dimensions at the psychological level, social support mechanisms and normative timing expectations at the societal level, and probabilistic information (really, long-range expectations) about the availability and adequacy of multiple streams of future economic resources. Clearly, disciplinary accounts can only tell part of the story when it comes to explaining the range of forces that structure the thought processes of those who save for retirement. Also of theoretical interest is the extent to which the structural model tested in this study will generalize to other forms of retirement planning, such as decisions involving living arrangements, fitness and health care practices, and engagement in phased retirement options.

A second implication follows from the relatively few significant age and cross-cultural effects seen in the *structure* of the interdisciplinary model. The overall pattern of configural invariance (Horn et al., 1983) seen across the four empirical models leads to theoretical and applied implications. In terms of theory, this result suggests a common set of motivational processes underlie adults’ financial planning practices. In other words, with the exception of the one omitted path, the general model shown in Figure 2 holds for individuals 35 or 60 years-of-age, living in Oklahoma City, Eindhoven, or Amsterdam. Had this not been the case, one would have expected to see a larger set of pathways “drop out” of certain subgroup models, and other sets of non-hypothesized pathways would have been found to emerge. As suggested in the introduction, the scenario that ultimately empirically emerged—that is, age- and cross-cultural invariance in the model—is a “best case” outcome. It suggests that qualitatively different types of saving intervention programs are, in all likelihood, unnecessary. Instead, the most valuable programs and initiatives would be ones designed to build on

individuals' strengths, while at the same time eliminating any known planning-related weaknesses in the context of a comprehensive psycho-social-economic education program.

From an applied public policy perspective, the findings from this study suggest other important implications. Large numbers of individuals are likely to find themselves behind the curve when it comes to saving for retirement, as the burden of fiscal responsibility increasingly becomes shifted onto their shoulders. Needed at present are strong forward-thinking public policy initiatives, particularly in the United States, aimed at stimulating personal saving practices. Examples include asset development programs that ensure opportunities for real-world saving experiences among low SES children, financial literacy programs and educational campaigns, and media-based public service promotions that are designed to get individuals to set clear and achievable financial goals. All three types of initiatives (and others like them) have been founded in the United States based on public- and private-sector partnerships as ways to help ensure the future financial security of American workers. Significant savings initiatives are also being discussed in the Netherlands; however, most Dutch schemes that have been proposed are resolved to take place at a collective level, thereby de-emphasizing the role of individual-level interventions. Irrespective of one's age or country of origin, however, the findings from this investigation suggest that it may never be too early to start people thinking about and discussing retirement security issues. Any such discussions are certain to be most productive when held in the context of a nurturing and supportive social milieu in which financial literacy and fiscal preparedness are highly valued.

Based on the design of this study, certain limitations apply regarding the ability to draw developmental conclusions from cross-sectional data. Specifically, it is not possible to disentangle age from period or cohort effects. That said, however, the findings from this inquiry build upon other investigations that have demonstrated the existence of age effects in financial planning for retirement (e.g., Dan, 2004; DeVaney & Chiremba, 2005; Helman et al., 2006). This study was also limited by the use of single-item indicators for a subset of measurement constructs and the use of convenience sampling procedures among members of the American sample. The latter, in particular, could have led to some unknown degree of response bias. The use of a more representative sampling approach in future investigations would be prudent, as would be the development and use of multiple-item scales for constructs such as early savings-related learning experiences, spousal/partner influences on planning saving, and level of trust in state-sponsored pensions. In particular, items that tap the influence of parents as role models would potentially be valuable, as would items that measure other aspects of dyadic decision making such as a spouse or partner's financial knowledge.

We close this article on a positive note, optimistic that much has been learned in this study about the psychological underpinnings of retirement planning and



saving. Undoubtedly, much more work will need to take place before we are able to fully address the question posed at the beginning of this article: *Why doesn't everyone of reasonable means plan and save?* Suitable multivariate answers—which are only recently beginning to take shape—are indeed complex. Despite their complexity, however, as diligent researchers we are confident that those answers will ultimately fall within our grasp.

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